APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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			EXAMINER
7590	11/03/2005		HENN, TIMOTHY J

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ART UNIT	PAPER NUMBER
2612	

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>27 September 2005</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3 and 5-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 5-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>04 April 2000</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All   b)☐ Some *   c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 27 July

2005 has been entered.

Response to Arguments

2.   Applicant's arguments filed 27 July 2005 have been fully considered but they are

not persuasive. Regarding Applicant's arguments that Wilder does not "simultaneously

provide" signals or two frames which are capable of overlapping since two different

readouts would be required the examiner notes that the claim does not require

simultaneous readout as argued. As broadly as claimed "simultaneously provid[ing]

signals representing a frame with one or more windows having pixels" can be

interpreted as exposing the array, which includes one or more windows having pixels

and allowing for any of the pixels to be readout. Since the array of Wilder allows for

either multiple windows which can be readout after exposure, the array "simultaneously

provides" the windows (i.e. the array contains or "provides" data for two or more

windows which are capable of overlapping). Even though only the windows would be

readout individually as noted by the applicant, the data for the windows would exist on

the array simultaneously and be available for readout. Since the claim does not require

simultaneous readout from the array the rejections based on Wilder will be maintained

below. Although the claims are interpreted in light of the specification, limitations from

the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26

USPQ2d 1057 (Fed. Cir. 1993).

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4.   Claims 1-3, 6, 8, 10-12, 16, 17, 20, 21, 24, 25, 28, 30 and 31 are rejected under

35 U.S.C. 102(b) as being anticipated by Wilder et al. (US 5,262,871).

[claim 1]

In regard to claim 1, note that Wilder et al. discloses a vision system for imaging

a scene using a dynamically reconfigurable photodetector array (Figure 1, Item 10)

comprising: a video camera (Figure 1) having at least one reconfigurable photodetector

array capable of imaging a scene (Figure 1, Item 10); means for controlling

characteristics (i.e. which pixels will be read-out and what resolution the array will be

read-out at) of imaging by the photodetector array (Figure 1, Items 12 and 14); and a

computer system for receiving signals from the photodetector array representing the

scene imaged by the photodetector array and sending signals to the controlling means

to configure the characteristics of imaging by the photodetector (Figure 1, Item 18;

Column 4, Line 45 - Column 5, Line 11). However, Wilder et al. does not specifically

discloses a system wherein two or more of the windows overlap in said frame. It is

noted that Wilder et al. discloses that the readout can be performed on "any region or

regions of the image sensor" (Column 6, Lines 41-44). As recognized by the applicant

(see remarks, page 6) Wilder is capable of outputting overlapping windows which are

read out at different times (i.e. fields). Therefore, the windows of Wilder are inherently

"capable of overlapping" as claimed. As broadly as claimed "simultaneously provid[ing]

signals representing a frame with one or more windows having pixels" can be

interpreted as exposing the array, which includes one or more windows having pixels

and allowing for any of the pixels to be readout. Since the array of Wilder allows for

either multiple windows which can be readout after exposure, the array "simultaneously

provides" the windows (i.e. the array contains or "provides" data for two or more

windows which are capable of overlapping).

[claim 2]

In regard to claim 2, note that Wilder et al. discloses a photodetector array that

provides signals representing a frame with one or more regions of interest or "windows"

having pixels (Column 6, Lines 3-46, specifically the "multiple region of interest" mode).

[claim 3]

In regard to claim 3, note that Wilder et al. discloses a photodetector array that further comprises means for controlling the resolution of the pixels in each of the regions of interest or "windows" (Column 6, Lines 3-46; specifically the "combination of both the VR and MRI" mode).

[claim 6]

In regard to claim 6, note that Wilder et al. discloses controlling means which represent a controller located on the photodetector array (Figure 2; Column 5, Lines 23-65).

[claim 8]

In regard to claim 8, note that Wilder et al. discloses a system wherein the computer system is integrated into the video camera (Figure 1).

[claim 10]

In regard to claim 10, note that Wilder et al. discloses a computer system that sends signals to the controlling means representing window request commands that contain information used to dynamically reconfigured one or more of the photodetector array's imaging characteristics (Column 4, Line 45 - Column 5, Line 11).

[claim 11]

In regard to claim 11, note that Wilder et al. discloses characteristics which represent spatial (i.e. resolution) and temporal (i.e. when the pixels will be read-out) parameters (Column 4, Line 67 - Column 5, Line 11).

[claim 12]

In regard to claim 12, note that Wilder et al. discloses a photodetector array that contains a plurality of pixels that have fixed dimensions (Column 19, Lines 1-13).

[claim 16]

In regard to claim 16, note that Wilder et al. discloses a system wherein said computer system and said video camera are part of a closed-loop interactive system (Figure 1).

[claim 17]

In regard to claim 17, note that Wilder et al. discloses a computer system which is capable of analyzing video imagery for target objects and determining the necessary position, size, shape, resolution and frame rate of multiple, overlapping windows within the vision system's field of view (Column 6, Lines 48-64).

[claim 20]

In regard to claim 20, note that Wilder et al. further discloses means for generating a window request command to the video camera identifying the characteristics (Column 4, Line 45 - Column 5, Line 11).

[claim 21]

In regard to claim 21, note that Wilder et al. further discloses means for generating a window request command to the video camera identifying the characteristics, in which the characteristics represent a position, size, shape, resolution and frame rate of multiple windows (Column 4, Line 45 - Column 6, Line 64).

[claim 24]

In regard to claim 24, as recognized by the applicant Wilder allows for readout of overlapping windows at separate times. It is noted that since these readout occur independently, they are inherently "non-destructive" as claimed.

[claim 25]

In regard to claim 25, Wilder discloses multiple windows which are of the same or different resolutions (c. 6, ll. 40-44).

[claim 28]

Regarding claim 28, Wilder teaches a system for imaging comprising: at least one photodetector array capable of imaging successive frames in which each frame has windows of pixels at a low resolution (Figure 1, Item 10; Figure 2); and means for controlling the resolution of one or more windows of the frame (Figure 1, Item 18; c. 2, l. 49-61; c. 4, l. 45 - c. 6, l. 64). The examiner notes that the remaining limitations of claim 28 are intended use limitations and reminds the applicant that apparatus claims must be distinguishable from the prior art in terms of structure rather than function (see MPEP §2114). See claims 1 and 22 for further details.

[claim 30]

Regarding claim 30, Wilder teaches creating windows for regions of interest for use in search and tracking operations (c. 2, ll. 49-61). The examiner notes that when tracking an object the windows would inherently be "time-correlated frame-by-frame with the location of said one or more objects" as claimed.

[claim 31]

Regarding claim 31, the windows of Wilder are "capable of overlapping each other" as claimed (see response to arguments).

5.   Claims 32, 34 and 35 are rejected under 35 U.S.C. 102(e) as being anticipated by Ozawa et al. (US 6,080,104).

[claim 32]

Regarding claim 32, Ozawa teaches an video imaging apparatus comprising: at least one detector array for imaging a scene (Figure 1, Item 51); and a controller for controlling characteristics of imaging by the detector array to simultaneously output one or more windows in which two or more of the windows are capable of overlapping (c. 3, ll. 63-66; Figures 6 and 7; the examiner notes that a controller for driving the CCD array of Ozawa to output data is inherent).

[claim 34]

Regarding claim 34, Ozawa teaches windows which are simultaneously output and are of the same or different resolution (Figure 7).

[claim 35]

Regarding claim 35, Ozawa teaches windows which overlap non-destructively (Figures 1, 6 and 7; c. 5, l. 43 - c. 6, l. 19).

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7.   Claims 5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Wilder et al. (US 5,262,871) in view of Yoshimura et al. (US 6,556,241).

[claim 5]

In regard to claim 5, Wilder et al. discloses a system, which meets the

requirements as set forth in claim 1 as discussed above. Therefore, it can be seen that

Wilder et al. lacks a system, which further comprises a client-server interface between

said computer system and said controlling means. Yoshimura et al. discloses a remote-

controlled camera picture broadcast system in which a client-server interface exists

between a client computer and the camera controller so that users can control the

camera system from a remote location (c. 5, ll. 41-67). It would have been obvious to

one of ordinary skill in the art at the time the invention was made to combine the remote

control of Yoshimura et al. with the system of Wilder et al. to allow a client-server

relationship between the computer system and the controlling means so that the

camera can be controlled remotely.

[claim 9]

In regard to claim 9, Wilder et al. discloses a system, which meets the

requirements as set forth in claim 1 as discussed above. Therefore, it can be seen that

Wilder et al. lacks a system, which further comprises a computer system that is

separate from the video camera. Yoshimura et al. discloses a remote-controlled

camera picture broadcast system in which a client-server interface exists between a

client computer and the camera controller so that users can control the camera system

from a remote location (c. 5, ll. 41-67). It would have been obvious to one of ordinary

skill in the art at the time the invention was made to combine the remote control of

Yoshimura et al. with the system of Wilder et al. to allow a computer to be separately

located from the camera so that the camera can be controlled remotely.

8.   Claims 7, 13, 19, 22 and 23 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Wilder et al. (US 5,262,871).

[claim 7]

In regard to claim 7, Wilder et al. discloses a system, which meets the

requirements as set forth in claim 1 as discussed above. Therefore, it can be seen that

Wilder et al. lacks a system in which said controlling means represents a logic device

separate from said photodetector array. However, it is well known in the electronics art

that control circuitry can be either integrated on the same chip or made separate as a

different chip so long as the two chips remain in electrical contact with each other

(Official Notice). Therefore, It would have been obvious to one of ordinary skill in the art

at the time the invention was made to move the control circuitry for the photodetector

array onto a separate chip in order to be able to replace one device without the added

cost of replacing the other.

[claim 13]

In regard to claim 13, Wilder et al. discloses a system, which meets the

requirements as set forth in claim 1 as discussed above. It is further noted that Wilder

discloses a system which uses a CMOS photodetector (Column 18, Lines 36-43).

Therefore, it can be seen that Wilder et al. lacks a system including a photodetector

which is responsive to radiation in the visible spectral range. However, it is well known

in the art to use photodetectors which is responsive to radiation in the visible spectral

range to reproduce scenes as they would have been seen to a human viewer (Official

Notice). Therefore, It would have been obvious to one of ordinary skill in the art at the

time the invention was made to make the CMOS photodetector of Wilder et al.

responsive to radiation in the visible spectral range to reproduce images as they would

have been seen by a human viewer.

[claim 19]

In regard to claim 19, Wilder et al. discloses a system, which meets the

requirements as set forth in claim 2 as discussed above. Therefore, it can be seen that

Wilder et al. lacks a system wherein said computer system further comprises a user

interface enabling a human operator to analyze video imagery for target objects and

determine the necessary position, size, shape, resolution, frame rate and spectral

content of multiple windows within said visions system's field of view. However, it is

well known in the image recognition art that computer artificial intelligence is not as

good as human intelligence when it comes to determining complex patterns in images

(Official Notice). Therefore, It would have been obvious to one of ordinary skill in the art

at the time the invention was made to use a human being to analyze video imagery for

target objects as claimed to avoid false negatives and false positives in object tracking

determinations.

[claim 22]

In regard to claim 22, note that Wilder et al. discloses a method of tracking objects in a scene comprising a frame of windows comprising the steps of locating at least one object to be tracked in one of the windows in a low resolution (Column 6, Lines 48-57); and forming one or more windows having the object in a high resolution (Column 6, Lines 55-59) which are capable of overlapping each other and overlapping said one ore more of said windows at said low resolution in the frame in which the overlapping windows are simultaneously provided in the frame. As broadly as claimed "simultaneously provid[ing]" signals can be interpreted as exposing the array, which includes one or more windows having pixels and allowing for any of the pixels to be readout. Since the array of Wilder allows for either multiple windows which can be readout after exposure, the array "simultaneously provides" the windows (i.e. the array contains or "provides" data for two or more windows which are capable of overlapping). Therefore, it can be seen that Wilder et al. lacks a tracking method which identifies the object in the windows of high resolution. However, it is well known in tracking systems to identify objects which are being tracked in order to determine whether further actions need to carried out (Official Notice). Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to identify the object being tracked in the high resolution windows of Wilder et al. to determine whether further actions need to be carried out.

[claim 23]

In regard to claim 23, note that Wilder et al. discloses a system creates windows of high resolution for each region of interest or "target" (Column 6, Lines 55-59).

9.   Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilder et al. (US 5,262,871) in view of Kimata (US 5,095,211).

[claim 14]

In regard to claim 14, Wilder et al. discloses a system, which meets the requirements as set forth in claim 1 as discussed above. Therefore, it can be seen that Wilder et al. lacks a system wherein said photodetector array represents a device responsive to infrared wavelengths. Kimata discloses an infrared image sensor, which is responsive to infrared wavelengths, and thereby capable of detecting objects that conventional visible light image sensors may miss (c. 3, ll. 43-61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the infrared image sensor of Kimata with the system of Wilder et al. so as to detect objects using infrared which conventional visible light image sensors may miss.

10.   Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilder et al. (US 5,262,871) in view of Fossum et al (US 5,236,871).

[claim 15]

In regard to claim 15, Wilder et al. discloses a system, which meets the requirements as set forth in claim 1 as discussed above. Therefore, it can be seen that Wilder et al. lacks a system wherein said photodetector array is bonded to a

complementary metal oxide semiconductor read-out integrated circuit. Fossum et al.

teaches a photodetector array which is bonded onto an integrated read-out circuit so as

to use the proper material for optimum performance of the photodetector and read-out

circuit individually (Abstract; Figure 5), it is also noted that Fossum et al. uses a CMOS

circuit for their read-out circuit (Column 5, Lines 12-22). It would have been obvious to

one of ordinary skill in the art at the time the invention was made to use the

photodetector array of Fossum et al. to be able to individually choose the proper

material for both the photodetector array and read-out circuit.

11.   Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilder et

al. (US 5,262,871) in view of Chao et al. (US 5,216,484).

[claim 18]

In regard to claim 18, Wilder et al. discloses a system, which meets the

requirements as set forth in claim 1 as discussed above. Therefore, it can be seen that

Wilder et al. lacks a system wherein said computer system is capable of determining the

spectral signatures of said target object. Chao et al. discloses a real-time imaging

spectrometer with an image sensor and computer which is capable of determining

spectral signatures of objects for the purpose of remote observation and sorting of

materials (Column 3, Lines 55-60; Figure 1). It would have been obvious to one of

ordinary skill in the art at the time the invention was made to combine the functionality of

Chao et al. with the image sensor and computer system of Wilder et al. to allow Wilder

et al. to determine spectral signatures for the purpose of remote observation and sorting

of materials.

12.   Claims 26, 27 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Wilder et al. (US 5,262,871) in view of Fossum et al. (US 5,949,483).

[claim 26]

Regarding claim 26, Wilder teaches all limitations with the exception of

controlling window resolution by averaging pixels. However, Fossum teaches that

window resolution can be changed through block averaging which further allows the

user of noise reduction techniques (c. 4, ll. 22-39). Therefore, it would have been

obvious to one of ordinary skill in the art at the time the invention was made to use block

averaging to change the resolution of the windows as taught by Fossum.

[claim 27]

Regarding claim 27, Wilder teaches all limitations with the exception of

controlling window resolution by averaging pixels. However, Fossum teaches that

window resolution can be changed through block averaging which further allows the

user of noise reduction techniques (c. 4, ll. 22-39). Therefore, it would have been

obvious to one of ordinary skill in the art at the time the invention was made to use block

averaging to change the resolution of the windows as taught by Fossum.

[claim 29]

Regarding claim 29, Wilder teaches all limitations with the exception of

controlling window resolution by averaging pixels. However, Fossum teaches that

window resolution can be changed through block averaging which further allows the

user of noise reduction techniques (c. 4, ll. 22-39). Therefore, it would have been

obvious to one of ordinary skill in the art at the time the invention was made to use block

averaging to change the resolution of the windows as taught by Fossum.

13.   Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa

et al. (US 6,080,104).

[claim 33]

Regarding claim 33, Ozawa does not specifically disclose host computer system

which operates the controller. Official Notice is taken that it is notoriously well known in

the art to use a computer system to operate CCD driver controllers in order to change

the exposure conditions of the array (e.g. exposure time). Therefore, it would have been

obvious to one of ordinary skill in the art at the time the invention was made to use a

host computer system to operate the CCD driver of Ozawa in order to allow a user to

alter the exposure conditions of the array.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Timothy J. Henn whose telephone number is (571) 272-

7310. The examiner can normally be reached on M-F 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Ngoc Yen Vu can be reached on (571) 272-7320. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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TJH
10/23/2005

NGOC-YEN VU
PRIMARY EXAMINER